

CLAIMS

1. A power supply system for supplying portable equipment with electric power, comprising:

5 a notification portion;

a power supply for feeding at least the notification portion, the power supply including a lithium-ion secondary battery;

a temperature detection portion for detecting a temperature of the power supply;

10 a voltage detection portion for detecting a voltage of the power supply;

a memory portion for storing a first temperature, a first voltage and a second voltage that is smaller than the first voltage; and

a forced discharge portion for recognizing an abnormality of the power supply when the temperature of the power supply detected by the temperature
15 detection portion is not lower than the first temperature and the voltage of the power supply detected by the voltage detection portion is not lower than the first voltage in a state in which a power feed from the power supply to the portable equipment is off, for electrifying the notification portion by the power supply, for making the notification portion notify a message indicating that the
20 abnormality is being avoided, and for forcedly discharging the power supply until the voltage of the power supply detected by the voltage detection portion reaches the second voltage.

2. The power supply system according to claim 1, wherein the forced
25 discharge portion includes:

a switch coupled in series with the notification portion and coupled to the power supply together with the notification portion; and

a control portion for turning on the switch when the abnormality of the power supply is recognized, and turning off the switch when the voltage of the power supply detected by the voltage detection portion reaches the second voltage.

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3. The power supply system according to claim 2, wherein the control portion makes the memory portion store data indicating that forced discharge is completed when the forced discharge is completed, and makes the notification portion notify a message indicating that the abnormality is avoided when the power feed from the power supply to the portable equipment is on, based on the data indicating that the forced discharge is completed.

4. The power supply system according to claim 1, wherein the forced discharge portion includes a switch involved in the power feed from the power supply to the portable equipment; and a control portion for turning on the switch when the abnormality of the power supply is recognized.

5. The power supply system according to claim 4, wherein the control portion turns off the switch when the voltage of the power supply detected by the voltage detection portion reaches the second voltage.

6. The power supply system according to claim 5, wherein the control portion makes the memory portion store data indicating that the forced discharge is completed when the forced discharge is completed, and makes the notification portion notify a message indicating that the abnormality is avoided when the power supply becomes in a usable state, based on the data indicating that the forced discharge is completed.

7. The power supply system according to claim 1, wherein an active material of a positive electrode of the lithium-ion secondary battery comprises nickel complex oxide.

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8. The power supply system according to claim 7, wherein the first temperature is not lower than 55°C and not higher than 65°C, the first voltage is not lower than 4.05V and not higher than 4.15V for each lithium-ion secondary battery, and the second voltage is not lower than 3.85V and not
10 higher than 3.95V for each lithium-ion secondary battery.

9. A power supply system for supplying portable equipment having a notification portion with electric power, comprising:

a power supply for feeding at least the notification portion, the power
15 supply including a lithium-ion secondary battery;

a temperature detection portion for detecting a temperature of the power supply;

a voltage detection portion for detecting a voltage of the power supply;

a memory portion for storing a first temperature, a first voltage and a
20 second voltage that is smaller than the first voltage; and

a forced discharge portion for recognizing an abnormality of the power supply when the temperature of the power supply detected by the temperature detection portion is not lower than the first temperature and the voltage of the power supply detected by the voltage detection portion is not lower than the
25 first voltage in a state in which the power feed from the power supply to the portable equipment is off, for electrifying the notification portion by the power supply, for making the notification portion notify a message indicating that the

abnormality is being avoided, and for forcedly discharging the power supply until the voltage of the power supply detected by the voltage detection portion reaches the second voltage.

5 10. Portable equipment comprising:

 a notification portion;

 a power supply for feeding at least the notification portion, the power supply including a lithium-ion secondary battery;

 a temperature detection portion for detecting a temperature of the
10 power supply;

 a voltage detection portion for detecting a voltage of the power supply;

 a memory portion for storing a first temperature, a first voltage and a second voltage;

 a forced discharge portion for recognizing an abnormality of the power
15 supply when the temperature of the power supply detected by the temperature detection portion is not lower than the first temperature and the voltage of the power supply detected by the voltage detection portion is not lower than the first voltage in a state in which a power feed from the power supply to the portable equipment is off, for electrifying the notification portion by the power
20 supply, for making the notification portion notify a message indicating that the abnormality is being avoided, and for forcedly discharging the power supply until the voltage of the power supply detected by the voltage detection portion reaches the second voltage; and

 an equipment circuit fed by the power supply.

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11. The portable equipment according to claim 10, wherein at least one of the voltage detection portion, the memory portion, and the forced discharge

portion is integrated with the equipment circuit.